

MASTOVSKY, J.

TECHNOLOGY

Periodical: KVASNY PRUMYSL. Vol. 4, no. 10 Oct. 1958

MASTOVSKY, J, Barley and hops for brewing harvested in 1958. p. 243

Monthly List of East European Accessions (MEAI) LC, Vol. 8, no. 3
March 1959, Uncl.

COUNTRY : Czechoslovakia H-27
 CATEGORY :
 ABS. JOUR. : RZKhim., No. 1959, No. 72913
 AUTHOR : Mastovsky, J.; Karel, V.; Kahler, M.
 INST. :
 TITLE : The Use of Gibberellines in Malting and
 Brewing
 ORIG. PUB. : Kvasny prumysl, 1959, 5, No 4, 81-86
 ABSTRACT : The experiments carried out have shown that
 the best results with sprouting of barley are obtained
 with a concentration of 0.2 g gibberelline A (I) per 1 kg
 of barley. The stimulating action of I is enhanced on
 simultaneous addition of glucose (II): 0.01 mg% I and 0.01%
 II. A solution of the above-stated composition was used to
 spray a normally steeped, dilated barley. Also tested was
 the effect of an 0.01% solution of II (in an amount of
 0.2mg II per 1 kg barley). At a concentration within the
 limits of 0.01% - 10 mg per 100 ml of wort, no effect of
 I on yeast could be detected. -- A. Yemel'yanov.
 CARD: 1/1

86

MASTOVSKY, Jiri

The 75th anniversary of the Brewing and Malting Research
Institute in Prague. Kvasny prum 9 no.5:97-102 My '63.

1. Vyzkumny ustav pivovarsky a sladarsky, Praha.

MASTOVSKY, J., inz.

Conferences at the Research Institute of Brewing and Malting in
Prague. Kvasny prum 10 no. 3:172-173 Ag '64.

L 00201-66 EWT(1)/EWP(m)/EPF(c)/EWA(d)/EWP(j)/FCS(k)/EWA(h)/EWA(c)/ETC(m) RPL
 ACCESSION NR: AP5013182 WH/JW/RM CZ/0041/65/000/002/0148/0157

AUTHOR: Mastovsky, Jiri (Mashtovskyy, Y.) (Engineer)

TITLE: Shock tube of the Institute of Thermomechanics for studying the thermo-physical properties of gases

SOURCE: Strojnický časopis, no. 2, 1965, 148-157

TOPIC TAGS: shock tube, reflected shock wave, gas property

ABSTRACT: The paper discusses the design, construction, and initial experiments with a shock tube for studying the thermophysical properties of gases at high temperatures. A comparison of the parameters of the gas behind the shock wave, which are obtainable in various types of shock tubes, served as the basis for selecting a double-diaphragm tube with an abrupt change in cross-sectional area. In all of the technical gases measured (air, nitrogen, CO₂, CO, H₂O), hydrogen or helium being used as the driving gases, the desired temperatures (about 4000K) and pressures (10 bars) were readily produced. The shock tube consists of individual interchangeable parts. This construction permits measurements, on the one hand, behind the incident shock wave and in the electrically nonconducting and non-magnetic section, and on the other hand, behind the wave reflected from the closed

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ACCESSION NR: AP5013182

end of the tube. Optical measurements can be performed in an easily insertable part of square cross section. Additional parts are devices for separating the gas, filling and evacuating the tube, and the principal measuring instruments. Results of initial experiments with the tube which confirm its correct operation are presented. Orig. art. has: 11 figures and 4 formulas.

ASSOCIATION: Ustav termomechaniky CSAV, Prague (Institute of Thermomechanics, CSAV)

SUBMITTED: 05 October 64

ENCL: 00

SOB CODE: TD, ME

NO REF SOV: 001

OTHER: 006

mlr
Card 2/2

L 43987-66 EMP(m)/EMP(i)/T-2 LJP(c) WW/LN/RM
ACC NR: AP6032113 SOURCE CODE: CZ/0002/65/000/000/66/0068

AUTHOR: Mastovsky, J.

ORG: none

TITLE: New trends in the research of dynamics and thermomechanics of gases ² ⁸⁹ _B

SOURCE: Ceskoslovenska akademie ved. Vestnik, no. 1, 1965, 66-68

TOPIC TAGS: gas ionization, gas dissociation, gas dynamics, heat transfer

ABSTRACT: The Institute of Thermomechanics of the Czechoslovak Academy of Sciences arranged on 5 to 7 Oct 1964, a scientific meeting at Liblice; the meeting had the title given in the heading. 6 main subjects were discussed. 1: Thermophysical properties of gases at high temperatures and their determination. Dissociation and ionization of gases at high temperatures were discussed. Shock waves in pipes were described, and thermal conductivities of gases at high temperatures given. 2: Dynamics of gases at high velocities and temperatures, applied to trans-sonic and supersonic turbines were discussed, and experiments conducted at the super-sonic tunnel at the Institute described. 3: Heat and mass transfer, in dissociated gases, at high temperatures by convection and radiation, evaporation of solids and thermophoresis were discussed. 4: Limiting layers and turbulence in magnetohydrodynamics at low

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ACC NR: AP6032113

magnetic Reynolds numbers were discussed. 5: Thermodynamic cycles at high temperatures with respect to plasmodynamic generators and their comparison with more conventional devices were described. 6: Methods of measuring of data at high temperatures and velocities were evaluated. Thermometers for registering fast temperature changes, thermometers suitable for 5000°K, and ultrasonic gas velocity meters were described. [JPRS]

SUB CODE: 20 / SUBM DATE: none

Card

2/2 *ULR*

F

sci. Conf. on Conservation and Utilization of Resources, 1949, vol. 3, 218, 219. Coal supplies 75% of energy consumed: coal and other power 3% and 2% respectively. In 1948, 15% of the total coal was allocated to domestic consumers. Detailed data are presented which embody the results of a sample questionnaire survey of Prague consumers and a study of the allocations to consumers by the Central Coal Board. (1948, 74)

MASTOVSKY, OTAKAR

Ekonomisace ve vytapeni. [Prahá] Technicko-vedecké vydavatelství, 1951. 22 p.
[Economy of heating. Bibl., graphs]

SO: MONTHLY LIST OF EAST EUROPEAN ACCESSIONS, LC., VOL. 3, NO. 1, Jan. 1954, Uncl.

MASTOVSKY, O.

" 'For Creative Application of Soviet Methods in Fulfilling the Directions of the Tenth Congress of the Communist Party of Czechoslovakia' Conference." p. 854 (STROJIRNICTVI. Vol. 4, No. 11, Nov. 1954; Praha, Czech.)

So: Monthly List of East European Accessions, (EEAL), LC, VOL. 4, No. 4, April 1955, Uncl..

MASTOVSKY, J.

Improvement in the efficiency of thermoelectric plants; p. 499.

TECHNICKA PRACA. Czechoslovakia, Vol. 7, no. 11, Nov 1965.

Monthly List of East European Acquisitions (EMAI), LC. Vol. 1, no. 2, September
1959 Uncl.

MASTOVSKY, OTAKAR

"Hydromechanika; celostatni vysokoskolska ucebnice. [Vyd.1.] Praha, Statni nakl.technicke literatury, 1956. [Hydromechanics; a university textbook. 1st ed. illus., bibl., diagrs., footnotes, graphs, index, tables]."

p.271 (Praha, Czechoslovakia)

Monthly Index of East European Accession (EEAI) LC, Vol. 7, No. 1, April 1958

MASTOVSKY, O.

2356. URBAN HEAT SUPPLY. Mastovsky, O. (Energiateshnik, May 1956, vol. 6, 184-201). Statistics are given of the population of Prague, the number of dwellings, amount of fuel used in 1954 and its utilization, the number and type of heating appliances. District heating in Prague since the beginning of the century is reviewed and further development is discussed paying regard to ever-increasing outside temperatures.

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032810017-8

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001032810017-8"

MASTOVSKY, O.

Prof. Dr.-Ing. O. Mastovsky (Prague), "Die Waermeversorgung von Prag," Energietechnik, Leipzig, Vol. 6, No. 5, May 1956, pp. 198-203.

Rough translation of title: The Heat Supply of Prague

MASTOVSKY, O.

250th anniversary of Czechoslovak technical education.

P. 257, (Energetika) Vol. 7, no. 5, May 1957, Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) Vol. 6, No. 11 November 1957

MASTOVSKY, O.

Steam distribution gear for taped steam turbines operated in parallel.

P. 507. (ENERGETIKA.) (Praha, Czechoslovakia) Vol. 7, No. 10, Oct. 1957

SO: Monthly Index of East European Accession (EEAI) LC. Vol. 7, No. 5, May 1955

MAS TOWSKI, U. _____

30(7)

AUTHOR:

TITLE:

Velickovic, D., Doctor of Engineering and Professor
The Twelfth Special Session of the World Power

PERIODICAL:

Tekhnika, 1959, № 1, pp 201-201 (YUG)

ABSTRACT:

The Twelfth Special Session of the World Power Conference was held from 10 to 11 September 1958 in Geneva, Switzerland, and held French Special Session of this Organization and held French Special Session of this Organization and held French Special Session of this Organization.

Card 1/3

The Electric Power Network in the USSR, its Significance for the National Economy and the Economic Indices^{*}, by A. I. Tsurkovskiy and V. Tarabukov on "Efficiency of Fuel Utilization in USSR Refineries"; Kozlovsky and L. Shvachkin on "Economic Advantages of the Use of Electric Power in Agriculture"; and I. Hudzakov on "Technical and Economic Problems of Bringing Electric Power to Remote Villages". The Polish delegates presented the following papers: Professor J. Lepkowski on determining the optimum limit of mineral impurities in electric power; Mineral Impurities in Profitable Extraction of Minerals from Coal; Methods of Improving Combustion Processes and Efficiency of the Use of Steam Turbines with Oxidation-Fuelled Engines; and Dr. Janusz Gosciniak's presentation in an electric Power System. The USSR papers were: V. Kravtsov on "The Gas - Steam Cycle with Supplementary Firing," and O. Kostomarov on "economic Overview of the Plans for Thermal Power Plants over

Case 2/3

3.3

SORM, Frantisek, akademik; MASTOVSKY, Otakar; KASPAR, Jan; SIRACKY, Andrej;
VANA, Josef; ZACHOVAL, Ladislav; RASKA, Karel; BLASKOVIC, Dionyz,
akademik; WICHTERLE, Otto, akademik; PRANTL, Ferdinand; CUTA, Frantisek;
JERIE, Jan; HENNER, Kamil, akademik; CAPEK, Ladislav; LINK, Frantisek;
STRNAD, Julius

Report on the activities of the Czechoslovak Academy of Sciences made
at its 12th General Assembly, and the discussion. Vestnik CSAV 70 no.1:
26-34 '61.

1. Namestek presidenta Ceskoslovenska akademie ved (for Sorm).
2. Clen korespondent Ceskoslovenske akademie ved (for Mastovsky,
Kaspar, Siracky, Vana, Zachoval, Raska, Prantl, Cuta, Jerie,
Capek, Link and Strnad).
3. Predseda Slovenskej akademie vied
(for Siracky).

MASTOVSKY, Otakar, prof., inz. dr., DrSc.

Remarks on the use of time diagrams. Energetica Cz 13 no.8:
407-410 Ag '63.

1. Clen korespondent Ceskoslovenske akademie ved; Ceske vysoke
uceni technicke, Praha.

MASTOVSKY, O. (CSSR)

A new type of governor for turbine sets. Inst masz przep PAN
no.14/16:480-481 '63.

4875. IRON SMELTING IN CUPOLA FURNACES WITH PEAT. Kastyukov,
A. V. and Grinberg. (Torfyanaya Promuishlennost (Peat Industry),
1947, No.7, 27-30).

CA

9

The utilization of peat coke in cupola furnaces. A. V.
Mastryukov and B. G. Grinberg. *Torfyennaya Prom.* 24,
No. 8, 24-5(1947).--A discussion of 1. of coke for the
manuf. of cast iron Marshall Sittig

PAPIR-IZ NYOMDATECHNIKA — PAPER AND PRINTING

Vol. 2 — 1950

No. 9, Sept.

V. A. Mastrikov, H. G. Grubova
and M. V. Shirova

The use of high frequency currents in
the production of printer's type allows
(Translated from the Russian)

pp. 7-9

MASTRYUKOV, A.V.
PHASE I

BOOK

Call No.: TN665.M26 1952

Author: Mastriukov, A.V.

Full Title: TECHNOLOGY OF METALS, 2nd edition

Transliterated Title: Tekhnologiya metallov

Publishing Data

Originating Agency: None.

Publishing House: State Scientific-Technical Publishing House of Machine Building Literature

Date: 1952

No. pp.: 494

No. of copies: 75,000

Editorial Staff

Editors: Trubin, G.K.

Tsilev, L.M.

Rubtsov, N.N. et al

Ed.: Beizel'man, R.D.

Appraiser: None.

Ed.-in-Chief: None.

Text Data

Coverage: A textbook on metal technology which includes the following: structure and properties of metals and alloys; smelting of cast iron; steel and non-ferrous metals; equipment for treating metals; casting, rolling, stamping, welding, and cutting of metals. 534 Diagrams. 60 Tables.

Purpose: A textbook approved by the Ministry of Education for students of tekhnikums (excluding machine building tekhnikums).

Facilities:

No. of Russian or Slavic References: None.

Available: Library of Congress.

MASTRYUKOV, A.V.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
Masteryukov, A.V.	"Technology of Metals" (student manual)	All-Union Correspondence Institute of Textile and Light Industry

80: W-30604, 7 July 1954

DEITS, Mikhail Yefimovich; MASTRYUKOV, Aleksandr Vasil'yevich,
redaktor; GUSEV, Viktor Petrovich; CHAIKUSH'YAN, L.P., redaktor;
EL'KINA, E.M., tekhnicheskii redaktor;

[Bearing alloys with a zinc foundation and their use in light
industry] Podshipnikovye splavy na tsinkovoi osnove i ikh
primeneniye v legkoi promyshlennosti. Pod red. A.V. Mastriukova.
Moskva, Gos.nauchno-tekhn.isd-vo Ministerstva promysh.tovarov
shirokogo potrebleniya SSSR, 1955. 78 p. (MLRA 8:12)
(Alloys) (Bearings(Machinery))

MASTRYUKOV, A. V.

Increasing the Durability of Cutting Tools

TEZHKA PROMISHLENNOST (Heavy Industry) Issue #9; 6; September 1965

MASTRYUKOV, A.V.

Increasing the durability of metal-cutting tools. Leg.prom. 15
no.2:29-30 F '55. (MIRA 8:4)
(Metal cutting tools)

MASTRYUKOV A.V.

DRITS, M.Ye.; MASTRYUKOV, A.V.

TSAN 9-1,5 zinc alloy used in bearings. Tekst.prom. 18 no.5:51-53
My '58. (NIRA 11:5)

(Bearing metals) (Zinc alloys)

MASTRYUKOV, B.S.; KRIVANDIN, V.A. -

Investigating the radiation emissivity of various types of
soot formation. Izv. vyd. ucheb. zav.; Chern. met. 7 no.1:
188-191 '64. (MIRA 17:2)

1. Moskovskiy institut stali i splavov.

L 24782-65 EPF(5)/EWP(3)/EWT(m)

Pc-4/Pr-4 RM

ACCESSION NR: AP4049609

S/0076/64/038/011/2674/2675

28
27
3

AUTHOR: Vilkov, L. V.; Gorokhov, L. N. Mastryukov, B. S.; Rusin, A. D.

TITLE: Molecular mass and mass spectrum of the vapors $\text{Ge}(\text{C}_2\text{H}_2)(\text{CH}_3)_2$

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 11, 1964, 2674-2675

TOPIC TAGS: molecular mass, $\text{Ge}(\text{C}_2\text{H}_2)(\text{CH}_3)_2$, mass spectrum, dimeric molecule, vapor, monomeric ion

ABSTRACT: The authors have investigated the mass spectrum, and determined the molecular mass of the vapors of $\text{Ge}(\text{C}_2\text{H}_2)(\text{CH}_3)_2$ with the mass spectrometer MI-1305. The spectrum indicates the presence of dimeric molecules with the mass numbers 252-265, 237-249, 211-223, and 115-121, which are assigned to various ions. Particularly strong is the group of lines 85-91 [$\text{Ge}(\text{CH}_3)^+$ -ion]. The monomeric ion was not detected. The average molecular mass is 234. "The author is grateful to M. E. Vol'pin and Dulova for discussions." Orig. art. has: 1 figure.

Card 1/2

L 24782-65

ACCESSION NR: AP4049609

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonova,
Khimicheskiy fakul'tet (Moscow State University, Chemistry Department)

SUBMITTED: 14Aug63

ENCL: 00

SUB CODE: ME, GP

NO REF SOV: 003

OTHER: 001

Card 2/2

MASTRYUKOV, B.S.; KRIVANDIN, V.A.

Effect of the elementary composition of soot particles on their radiation characteristics. Izv. vys. ucheb. zav.; chern. met. 8 no.5:183-187 '65. (MIRA 18:5)

1. Moskovskiy institut stali i splavov.

OSTROUSHKO, I. A., prof.; YEMEKEYEV, V. I., dotsent; BOBIN, Ye. G.,
inzh.; MEDVEDEV, V. V., inzh.; KOBAKHIDZE, V. N., inzh.;
KRIVCHIKOV, P. F., inzh.; CHUGUNOV, L. F., inzh.;
MASTRYUKOV, M. V., inzh.

Improving mechanized charging of blastholes. Izv. vys. ucheb.
zav.; gor. zhur. no.9:92-96 '61.

(MIRA 15:10)

1. Severokavkazskiy gornometallurgicheskiy institut. Rekom-
mendovana kafedroy gornogo dela.

(Blasting)

OSTROUSHKO, I.A.; YEMEKEYEV, V.I.; BOBIN, Ye.G.; KRIVCHIKOV, P.F.;
CHUGUNOV, L.F.; MASTRYUKOV, M.V.

Improving pneumatic charging of blast holes. Gor. zhur.
no.11:33-37 N '63. (MIRA 17:6)

1. Severo-Kavkazskiy gornometallurgicheskiy institut (for
Ostroushko, Yemekeyev, Bobin). 2. Tyrny-Auzakiy kombinat
(for Krivchikov, Chugunov, Mastryukov).

11751270000 V H
MASTRYUKOV, V.A., kand.med.nauk; NIKOLAYEV, V.P., inzh.

Modern apparatus for artificial respiration. Khirurgiia 33 no.10:
147-151 0 '57. (MIRA 11:2)

1. Iz komissii po apparature dlya iskusstvennogo dykhaniya i
anesteziologii (predsedatel' - prof. I.S.Zhorov) Komitet po novoy
meditsinskoy tekhnike Ministerstva zdrevookhraneniya SSSR.
(RESPIRATION, ARTIFICIAL, appar. & instruments
(Rus))

MASTRYUKOV, V.A.
MASTRYUKOV, V.A., kand.med.nauk (Moskva, G-48, Kooperativnaya ul. d.3,
Korp. 4, kv.14); CHERVINSKIY, A.A.

Respiration in patients with suppurative processes and lung tumors
[with summary in English]. Vest.khir. 79 no.9:33-39 S '57.

(MIRA 10:11)

1. Iz gospi'tal'noy khirurgicheskoy kliniki (zav. - prof. A.V.Gulyayev)
pediatricheskogo fakul'teta 2-go Moskovskogo meditsinskogo instituta
im. I.V.Stalina.

(LUNG NEOPLASMS

resp.funct. test.)

(LUNG DISEASES

resp.funct.tests in suppurative processes)

(RESPIRATION, function tests

in lung cancer & suppurative lung dis.)

MASTRYUKOV, V.A., kand. med. nauk; DIDENKO, N.S., inzh.

Universal portable apparatus for artificial respiration. Voen. med.
zhur. no.2:84-87 P '59. (MIRA 12:7)

(RESPIRATORS

universal portable appar. (Rus))

SAVACHENKO, Rakhil' Ipat'yevna; inzh.; MASTRYUKOV, Vladimir Aleksandrovich,
klinitsist-kirurg. Prinimal uchastiye SOMS, N.I. KAZMIN, V.Y.,
red.; LYUDKOVSKAYA, N.I., tekhn.red.

[Manual on apparatus used for inhalation anesthesia] Rukovodstvo
po apparature dlia ingaliatsionnogo narkoza. Moskva, Gos.izd-vo
med.lit-ry Medgiz, 1960. 158 p. (MIRA 14:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo
instrumentariya i oborudovaniya (for Savachenko).
(ANESTHESIOLOGY--EQUIPMENT AND SUPPLIES)

MASTRYUKOV, V.A.; GALITSKIY, A.B.; NADTOCHIY, G.M.

Effectiveness of an inflatable chest "cuff" in artificial
respiration. Eksp. khir. i anest. 6 no.5:29-33 S-0 '61.

(MIRA 15:3)

1. Iz gospi'tal'noy khirurgicheskoy kliniki pediatricheskogo
fakul'teta (zav. - prof. A.V. Gulyayev) II Moskovskog meditsinskogo
instituta imeni N.I. Pirogova i Gorodskoy klinicheskoy bol'nitsy
No.64 (glavnyy vrach G.V. Rodygina).

(RESPIRATION, ARTIFICIAL)

ACC NR: AT6036650

SOURCE CODE: UR/0000/66/000/000/0275/0276

AUTHOR: Mastryukova, V. M.; Strzhizhovskiy, A. D.

ORG: none

TITLE: Comparative study of the cytogenetic effect of 630-Mev protons and Co⁶⁰ gamma radiation [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 275-276

TOPIC TAGS: cosmic radiation biologic effect, ionizing radiation biologic effect, relative biologic efficiency, radiation tissue effect, proton radiation biologic effect

ABSTRACT:

High-energy protons in cosmic radiation can affect regenerative processes in human tissue by suppressing mitotic activity, or by causing pathological mitosis or cellular destruction. Radiation-induced damage to genetic structures can result in pathological developments in the remote-aftereffect period. These phenomena were studied in corneal epithelium (mice) irradiated with 630-Mev protons from an CIYAI synchrocyclotron. Co⁶⁰

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ACC NR: AT6036650

gamma rays were used for comparison of the RBE and specific biological effect of high-energy protons.

Irradiation of animals with 630-Mev protons in doses of 100, 200, 700, and 1100 rad caused reversible suppression of mitotic activity in corneal epithelium: furthermore, recovery processes proceeded more slowly with increase in the radiation dose. The number of chromosome aberrations increased exponentially with increasing dosage (the average effective dose was 560 rad). Injury of genetic structures severely depressed reproductive capacity, as a result of which pathological mitoses could only be detected in tissue during a comparatively short postradiation period.

Chromosome aberrations were classified and a relationship established between suppression of cellular reproduction and the type of chromosome aberration. Death of cells from radiation-induced genetic injury was a major factor in decreasing the total number of cells in tissue. It was found that there are special cellular mechanisms which can stabilize the overall composition of corneal epithelium under various external conditions.

A comparative study of the reaction of corneal epithelium to Co^{60} gamma rays was conducted. Some features of mitosis recovery curves and some aspects of the distribution of chromosome aberrations are

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ACC NR: AT6036650

possibly connected with intracellular repair mechanisms and with remote radiation aftereffects. The RBE of 0.30-Mev protons (as compared with Co^{60} gamma-rays), estimated by the maximum level of chromosome aberrations, was established as 0.7. The other above-mentioned criteria permit only a semiquantitative estimate, which also set the RBE of protons close to one.

[W. A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3

MASTRYUKOV, V.S., kand.med.nauk

An unusual form of lymphogranulomatosis. Khirurgiia 35 no.7:124-125
Jl '59. (MIRA 12:12)

1. Iz gospiatal'noy khirurgicheskoy kliniki pediatricheskogo fakul'-
teta (zav. kafedroy - prof. A.V. Gulyayev) II Moskovskogo gosudarst-
vennogo meditsinskogo instituta im. N.I. Pirogova.
(HODGKIN'S DISEASE, pathology)

VILKOV, L.V.; MASTRYUKOV, V.S.; AKISHIN, P.A.

Electron diffraction study of the structure of p decaborane
molecule in the vapor state. Zhur.strukt.khim. 4 no.3:323-326
My-Je '63. (MIR^A 16:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Boron hydrides) (Electron diffraction examination)

MASTRYUKOV, V. S.; VILKOV, L. V.; AKISHIN, P. A.

"Electron-diffraction study of some organoelement compounds."

report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome,
9 Sep 63.

Chemical Dept, Moscow State Univ.

VOL'PIN, M.Ye.; STRUCHKOV, Yu.T.; VILKOV, L.V.; MASTRYUKOV, V.S.;
DULOVA, V.G.; KURSANOV, D.N.

Structure of the products obtained in the reaction of acetylene
with bivalent derivatives of germanium. Izv. AN SSSR. Ser.
khim. no.11:2067 N '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soedineniy AN SSSR.

VILKOV, L.V.; MASTYREV, V.S.; KRISHIN, I.A.

Electron diffraction study of the structure of the vinyl siloxane
crosslinked molecule, Khim. strukt. khim. 5 no. 2:189-191 (1974)
(MIR, 1974)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova

VILKOV, L.V.; MASTRYUKOV, V.S.; AKISHIN, P.A.

Electron diffraction study of the phenyltrichlorosilane molecule.
Zhur. strukt. khim. 5 no.6:906-908 N-D '64. (MIRA 18x4)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

VILKOV, L.V.; GOROKHOV, L.N.; MASTRYUKOV, V.S.; RUSIN, A.D.

Molecular mass and mass spectrum of 1,1-dimethylgermanene vapors.
Zhur.fiz.khim. 38 no.11:2674-2675 N '64.

(MIRA 18:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskoy fakul'tet.

L 63619-65 EPF(c)/EPR/EPA(w)-2/EMP(j)/ENT(1)/ENT(m)/EWA(m)-2 F1-l/Pc-l/Pr-l/Ps-l/
ACCESSION NR: AP5016917 Pz-6 IJP(c)/ UR/0192/66/006/003/0447/0449 58
RPL AT/JAJ/RM/WW 539.27 57
3

AUTHOR: Vilkov, L. V.; Mastryukov, V. S.; Akishin, P. A.; Zhigach, A. F.

TITLE: Electron-diffraction study of the structure of the carborane molecule in the vapor phase

SOURCE: Zhurnal strukturnoy khimii, v. 6, no. 3, 1965, 447-449

TOPIC TAGS: organoboron compound, carborane, electron diffraction

ABSTRACT: An attempt was made to refine the configuration of $B_{10}C_2H_{12}$ in the vapor phase. The theoretical curves and an experimental curve of the radial distribution $f(r)$ were plotted, and the parameters of the theoretical curves are tabulated. Because of the complexity of the carborane molecule, not all of the independent geometric parameters of the molecule were determined. The main peaks of the experimental curve of $f(r)$ are:

(1) (1.06 Å), (2) 1.33 Å, (3) 1.76 Å, (4) 2.86 Å, (5) (3.46 Å), and (6) (3.90 Å), the figures in parentheses indicating that the values are not completely reliable, in view of the electron diffraction data for carborane, the authors found it difficult to decide between two models: (1) a "basket" with $r(C-C) = 1.40$ Å and $r(B-C) = 1.60$ Å, and (2) an "icosahedron" with $r(C-C) = 1.68$ Å and $r(B-C) = 1.70$ Å. The main result of the study was the determination of

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L 63619-65

ACCESSION NR: AP5016917

the average length of the bond $r(B-B)_{av} = 1.76 \pm 0.01$ A, rotation of pyramids of boron atoms to $r(B_5-B_{10}) = 1.77 \pm 0.05$ A as compared to $r(B_5-B_{10}) = 2.01$ A in decaborane, and distance $r(B-C) \approx 1.60 \pm 1.70$ A. The authors also note that they have concluded a study of the structure of the dimethylcarborane molecule $B_{10}H_{10}(CCH_3)_2$, in which an icosahedral structure of the carborane skeleton was found with $r(B-C) = 1.75 \pm 0.05$ A and $r(C-C) = 1.70 \pm 0.1$ A. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 01Sep64

ENCL: 00

SUB CODE: OC, NP

NO REF SOV: 004

OTHER: 013

Card

2/2

VILKOV, L.V.; MASTRYUKOV, V.S.

Electron diffraction study of the structure of the phenylmonochlorosilane molecule. Dokl. AN SSSR 162 no.6:1306-1309 Je '65. (MIRA 18:7)

1. Moskovskiy gosudarstvennyy universitet. Submitted December 31, 1964.

ACC NR: AP7001492

SOURCE CODE: UR/0192/66/007/006/0883/0885

AUTHOR: Vilkov, L. V.; Mastryukov, V. S.; Zhigach, A. F.; Siryatskaya, V. N.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Electron diffraction study of the neocarborane molecule

SOURCE: Zhurnal strukturnoy khimii, v. 7, no. 6, 1966, 883-885

TOPIC TAGS: neocarborane, molecular structure, electron diffraction, icosahedron, icosahedral model, *electron diffraction analysis, isomerization*

ABSTRACT: The structure of the neocarborane molecule $B_{10}C_2H_{12}$ has been studied by the electron diffraction method in the gaseous phase. Neocarborane was prepared by thermal isomerization of ortho-carborane at 480C for 30 hr. Experimental curves of the molecular scattering component $SM(s)$ and of the radial distribution $f(r)$, and a table of the positions of maxima on the $f(r)$ curve are given in the source. Experimental data were compared with the respective data for a model of a regular icosahedron with carbon atoms meta to each other. This model was in accordance with earlier assumptions on the structure of neocarborane, and the chemical and physical properties of the compound.

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UDC: 539.27

ACC NR: AP7001492

It was shown that this icosahedral model is in complete agreement with electron diffraction data. The basic parameters of the neocarbonborane molecule are: $r(\text{BB}) = r(\text{BC}) = 1.77 \pm 0.01 \text{ \AA}$; $r(\text{BH}) = 1.21 \pm 0.03 \text{ \AA}$; $[r(\text{CH}) = 1.10 \text{ \AA}]$. Orig. art. has: 2 figures and 1 table. [W. A. 77]
[BO]

SUB CODE: 07, 21/ SUBM DATE: 16Mar66/ ORIG REF: 005/ OTH REF: 012

Card 2/2

MASTEN, A. A.

MASTEN, A. A.: "Kurs na razvedku i na razvedyvatel'skuyu sluzhbu" [Course for reconnaissance and reconnaissance service]. Moscow: Order of Lenin Central Library of the Ministry of Defense, 1964. 110 p. (also published in the Department of Cardiology, Institute of Science).

SO: Kurs na razvedku i na razvedyvatel'skuyu sluzhbu, 1964

MASTRYUKOVA, A.S., assistant

Determining stresses in flat pistons of high-speed machines.
Izv.vys.ucheb.zav.; mashinostr. no.6:81-91 '58. (MIRA 12:8)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche im.
Baumana.

(Pistons)

MASTYUKOVA, A.S., assistant

Determining stresses in coned pistons of high-speed machines.
Izv.vys.ucheb.zav.; mashinostr. no.1:49-59 '59.
(MIRA 13:3)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni
N.Ye.Baumana.
(Pistons)

MASTRYUKOVA, A.S., inzh.

~~MASTRYUKOVA, A.S., inzh.~~
Bending of flat pistons. Rasch.na prochn. no.4:97-120 '59.
(MIRA 13:4)

(Pistons)

S/135/61/000/002/002/012
A006/A001

AUTHORS: Prokhorov, N. N., Professor, Doctor of Technical Sciences, Mastryukova, A. S., Candidate of Technical Sciences

TITLE: Calculation of the Crystallization Scheme of a Weld Joint

PERIODICAL: Svarochnoye proizvodstvo, 1961, No. 2, pp. 4-8

TEXT: The technological and operational strength of welds depend on their crystallization scheme, i. e. on the orientation of columnar crystal boundaries in respect to the weld axis and their shape. There are different opinions in literature on the nature of crystallization of weld joints. M. V. Shamanin (Ref. 3) and G. L. Petrov (Ref. 4) consider that the rate of crystal growth increases when the growing crystals approach the center of the weld joint. In the case of directed crystallization the process takes place under conditions of orthogonality of columnar crystallite axes in respect to the isothermal surfaces of solidification. Thus the theoretical analysis of the crystallization system will be based on concepts on the nature of a temperature field during welding process. For this purpose N. N. Rykalin's theory on heat propagation in welding process can be used (Ref. 5). The authors studied the problem whether the crystallite axes were

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S/135/61/000/002/002/012
A006/A001

Calculation of the Crystallization Scheme of a Weld Joint

actually orthogonal to the isothermal surfaces of solidification and investigated a number of weld joints produced under different conditions (Fig. 1). They developed equations to calculate the crystallization scheme of weld joints, the angle $\frac{\theta}{2}$ formed between the tangent of the crystallite axis and the direction of displacing the heat source, and the crystallization rate. It was found that the disposition of crystallites of the weld joint exerted a substantial effect on its deformability in the temperature range of brittleness. To estimate the deformability of weld joints in this temperature range data are needed on the crystallite size, shape and orientation. The size and orientation of crystallites depend on the composition of the alloy, the crystallization rate and the shape of the isothermal surface of crystallization. Calculations of the $\frac{\theta}{2}$ angle showed that 1. the inclination of crystallite axes when changing welding conditions, vary only in areas which are remote from the seam axis and the fusion zone, remaining constant in the indicated area; 2. at a given value of linear energy, values of the $\frac{\theta}{2}$ angle increase with a higher welding speed, i. e. the crystallites are mainly oriented along the axis Y. 3. At a given welding speed the increase in linear energy causes higher values of $\frac{\theta}{2}$ and result in a reduced ductility of the weld joint in transverse direction. Figure 10, illustrating the dependence of the

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S/135/61/000/002/002/012
AC06/A001

Calculation of the Crystallization Scheme of a Weld Joint

crystallization rate on k proves that 1. mean values of the solidification rate of weld joints increase with a decrease of the parameter k , i. e. when approaching the center of the weld joint; the solidification rate attains, in the center of the seam, values equalling those of the welding speeds. 2. at a given value of the energy the solidification rate of the weld joint increases with a higher welding speed; but only in the center of the weld joint ($k = 0 \div 0.3$). In this zone processes of non-uniform crystallization are actually developing, promoting the appearance of a disoriented structure. 3. at a given welding speed the decrease of energy causes the equalization of solidification rate values over the section of the weld joint. The authors conclude that the shape and disposition of the crystallites are determined by two opposite tendencies. The one, determining the orthogonality of crystallites in respect to the isothermal surfaces of solidification, depends on the welding conditions and the shape of the welded work. The other, determining the rectilinearity of crystallites and disturbing the conditions of orthogonality, depends on the conditions preserving a minimum of free surface energy of crystallites. This tendency depends mainly on the nature of crystallite bonds, i. e. on the metal property. Assuming that the vector of the crystallization rate was directed perpendicular to the isotherm of solidification, it was

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S/135/61/000/002/002/012
A006/A001

Calculation of the Crystallization Scheme of a Weld Joint

possible to calculate the shape of crystallite axes and the scheme and rate of crystallization depending on welding conditions, by taking into account thermo-physical properties of the materials welded. Further experiments are needed to determine to what extent the second tendency affects the crystallite shape. Based on concepts on the incontinuity of the deformation field in the brittle temperature range the correlation of the crystallization scheme and the ductility of weld joints in this range is shown. This establishes one of the connections between the welding conditions and the technological strength of welds joint in crystallization process. ✓

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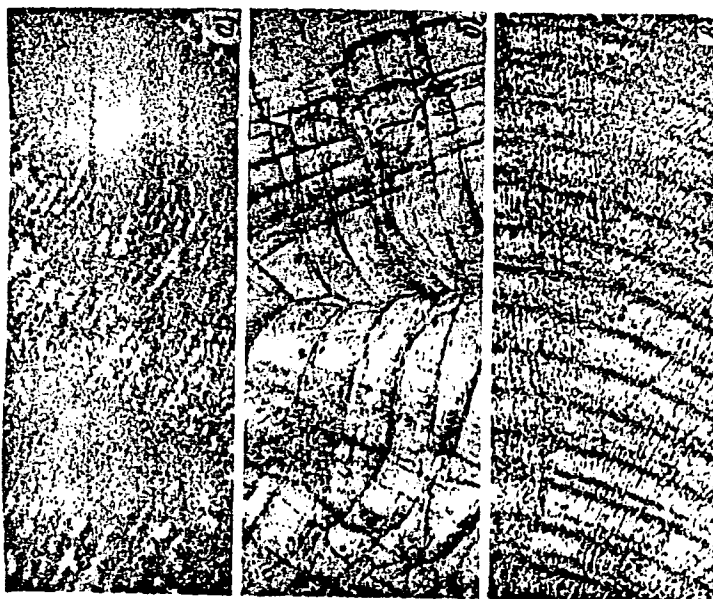
Calculation of the Crystallization Scheme of a Weld Joint

S/135/61/000/002/002/012
A006/A001

Figure 1

Structure of the surface of a weld: a - on 18-8/grade austenitic steel, x 100; b - on BT-14 (VT-14) titanium alloy x 30; c - on AMγM (AMgM) aluminum alloy x 50.

Figure 1:



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S/135/61/000/002/002/012

Calculation of the Crystallization Scheme of a Weld Joint A006/A001

Figure 8

Dependence of the angle $\frac{\theta}{2}$ on k , for "St.3" steel

Figure 10

Dependence of crystallization rate on k

There are 10 figures, 2 tables and 6 Soviet references.

ASSOCIATION: MVTU imeni Bauman

Figure 8:

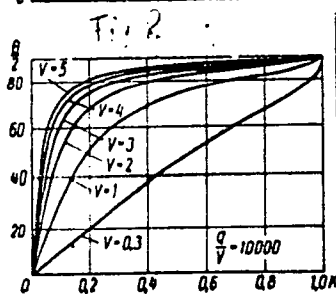
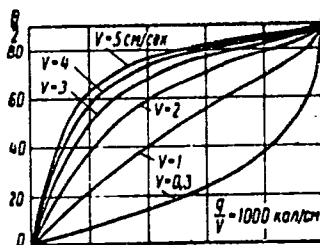
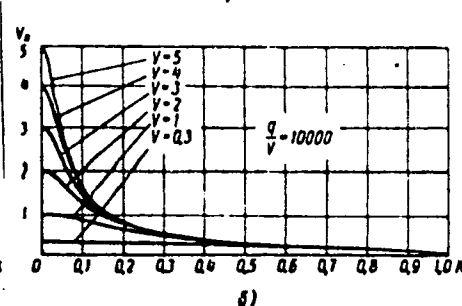
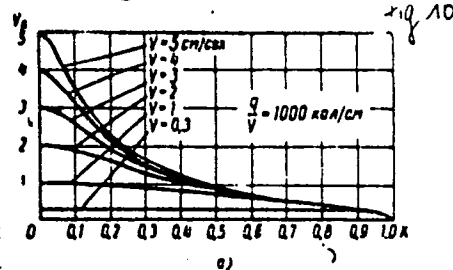


Figure 10:



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06/14/2000/006/001/014

06/14/06

AUTHORS: Prokhorov, N. A., Professor, Doctor of Technical Sciences,
Mastryukova, A. S., Candidate of Technical Sciences

TITLE: Calculating the scheme of weld metal crystallization in butt
welding of plates

PERIODICAL: Svarchnoye proizvodstvo, no. 6, 1962, 2-3

TEXT: To establish the relationship between hot crack formation and the nature of the weld metal crystallization scheme in butt welding of plates, a method was developed of calculating the crystallization scheme and the solidification rate of the weld metal. The following relationships were obtained for the crystallite axis, the angle α formed by the tangent to the crystal axis and the seam axis and the solidification rate, for the case when the plate was heated with a linear source moving at any speed:

$$\frac{\partial \alpha}{\partial v} = 1.154 \frac{1}{v \cos \alpha} \quad (11)$$

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Calculating the scheme of weld metal ...

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$$\frac{b}{c} = \arctg \left(\frac{V_N}{V_N} \cdot 0.208 \frac{g}{\Delta T} \right) \quad (12)$$

$$\frac{v}{\sqrt{1 + \left(\frac{v}{v_N} \right)^2 \cdot 0.043 \frac{g^2}{12.3 T^2} S^2}} \quad (13)$$

There are 4 figures.

ASSOCIATION: NVTU Allen Bauman

Card 2/2

POPOV, S.A., kand. tekhn. nauk, dots.; LUKICHEV, D.M., kand. tekhn. nauk, dots.; SKVORTSOVA, N.A., kand. tekhn. nauk, dots.; NIKONOROV, V.A., kand. tekhn. nauk, dots.; MINUT, S.B., dots.; RESHETOV, L.N., doktor tekhn. nauk, prof.; NIKOLAYEVSKIY, Ye.V., assist.; MASTRYUKOVA, A.S., kand. tekhn. nauk;

[Theory of mechanisms] Teoriia mekhanizmov; kurs lektsii.
[By] S.A.Popov i dr. Pod red. L.N.Reshetova. Moskva,
No.5. 1962. 123 p. (MIRA 16:7)

1. Moscow. Moskovskoye vyssheye tekhnicheskoye uchilishche.
(Mechanisms)

MASTRYUKOVA, A.S., kand. tekhn. nauk; PROKHOROV, N.N., doktor tekhn. nauk

Calculating crystallization isotherms during the butt
welding of plates. Svar. proizv. no.8:5-7 Ag '63.
(MIRA 17:1)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni
Baumana.

MASTRYUKOVA, A.S.; PROKHOROV, N.N.

Criteria for the pattern and rate of crystallization of
weld joints. Avtom. svar. 16 no.7:8-14 J1 '63. (MIRA 16:8)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana.
(Welding) (Crystallization)

MASTRYUKOVA, A.S.

Calculation of crystallization diagrams of welded seams.
Avtom. svar. 17 no.9:15-21 S '64. (MIRA 17:10)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana.

L 65084-65 EWT(m)/EWP(x)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HM

ACCESSION NR: AP5021220

UR/0125/65/000/008/0015/0021

621.791.011.001

AUTHOR: Prekhorov, N. N. (Doctor of technical sciences); Mastryukova, A. S. (Candidate of technical sciences)

TITLE: Primary structure and its significance in estimating the strength of weld metal

SOURCE: Avtomaticheskaya svarka, no. 8, 1965, 15-21

TOPIC TAGS: primary structure, weld metal, constitutional supercooling, metal structure, crystallization rate, temperature gradient, phase interface, columnar structure, dendritic structure, crystallite, weld center

ABSTRACT: Using the statistical approach, the author examines the role of the structural factor in the strength of weld metal, its effect on the stress-strain diagram. It is shown that the degree of constitutional supercooling and the metal structure can be estimated to a first approximation by calculating the thermal conditions of the crystallization of different zones of the weld joint. Thus, the criterion of constitutional supercooling (the ratio of crystallization rate to the temperature gradient on the boundary of the molten pool) is introduced. The field of temperature gradients at the phase interface is determined on the basis of the theory of heat propagation in solids. The mean crystallization rates over the

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ACCESSION NR: AP5021220

width of the weld joint are calculated and the pattern of distribution of values of the constitutional supercooling criterion along the crystallization isotherm is established; it is found that this criterion increases with approach to the weld-joint center; thus it is to be expected that the structure of weld metal must undergo major changes on transition from one zone to another. This is confirmed by the experimental findings: thus, for example, in the case of an alloy of aluminum with 2% Cu the weld metal has mainly a columnar-cellular structure, but crystallites with a dendritic structure appear at the center (on the boundary of contact between crystallites); the fine structure is also markedly affected. The authors attribute this to the effect of a high value of constitutional supercooling at the weld center. Considering the broad range of the compositions of alloys and of the welding techniques used, the structure of the weld metal may vary both quantitatively and qualitatively, and thus its strength also. Primary crystallites may acquire a columnar or equiaxial nature; dendritic and cellular formations also may appear or disappear with change in the crystallization conditions. The principal determining role in these changes belongs to constitutional supercooling. Orig. art. has: 10 figures, 17 formulas.

ASSOCIATION: MVTV im. Bauman

SUBMITTED: 17Jul64

ENCL: 00

SUB CODE: SS, MM

NR REF SOV: 006

OTHER: 000

Card 2/2 MK

ARBUZOV, YU. A., MASTRYUKOVA, T. A.

Cyclohexadiene

"Addition of cyclohexadiene-1, 3 to nitrobenzene."

Uch. zap. Mosk. un. No. 132, 1950.

9. Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

ARBUZOV, Yu.A.; MASTRYUKOVA, T.A.

Reactions of dienehydrocarbons with nitroso compounds. Addition of 1,3-cyclohexadiene to nitrosobenzene. Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk '52, 665-70. (MLRA 5:9)
(CA 47 no.20:10493 '53)

1. M.V.Lomonosov State Univ., Moscow.

KABACHNIK, M.I.; MASTRYUKOVA, T.A.; MELENT'YEVA, T.A.

Conjugation in the systems having a tetrahedral atom. Diarylphosphinic
acids. Zhur. ob. khim. 32 no.1:267-272 Ja '62. (MIRA 15:2)
(Phosphinic acid)

MASTRYUKOVA, T. A.

4
② Chem
✓ Reactions of diene hydrocarbons with nitroso compounds.
Addition of 1,3-cyclohexadiene to nitrosobenzene. Yu. A.
Arbuzov and T. A. Mastyukova, *Bull. Acad. Sci.,*
U.S.S.R., Div. Chem. Sci. 1952, 613-10 (Engl. translation).
— See C.A. 47, 10493b. H. L. H.

MASTRYUKOVA, T. A.

Chemical Abst.
Vol. 48 No. 9
May 10, 1964
Organic Chemistry

3
② Chem
Organophosphorus compounds. Reaction of phosphorus
sulfides with alcohols. M. I. Kalfachnik and T. A. Mas-
tryukhva. Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.
1952, 641-6 (Engl. translation).—See C.A. 47, 9909a.
H. L. H.

14

MASTRYUKOVA, T. A.

USSR Chemistry - Organophosphorus Compounds Jul/Aug 52

"Investigation in the Field of Organophosphorus Compounds. The Reaction of Phosphorus Sulfides with Alcohols," M. I. Kabachnik, T. A. Mastyukova, Inst of Org Chem, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 4, pp 727-735

Investigated the reactions of P_4S_3 , P_4S_6 and P_4S_{10} with alcs. Found that in the reaction of ethyl, propyl, or butyl alc with P_4S_7 , $(HO)_2P_2H$, $(RO)_2PSSH$,

(1) 229T21

and $(RO)_2(R')_2P_2$ are formed. The action of P_4S_6 on methyl alc results in the formation of $(H_3C)_2PSSH$ and $(CH_3O)(CH_3S)PS$. The action of P_4S_{10} on alcs results in the formation of $(RO)_2PSSH$ and $(RO)_2(RS)PS$. With isopropyl alc P_4S_6 reacts differently, forming $(iso-C_3H_7O)_2PSSH$ and $(iso-C_3H_7C)_2PSSH$. The reaction of P_4S_5 or of a phosphorus-sulfur melt having the atomic ratio 1:1 with alcs leads to the same products as the reaction with P_4S_6 , but the yields are smaller. Prepd for the 1st time

(2) 229T21

Card 1 of 2

MASTRYUKOVA, T. A.

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diethylthiophosphates (RO)₂PSSi and showed
that they are liquids which can be distd in
vacuum.

(3)

229T21

3
Chem

~ Diphosphorus compounds. Dialkyl dithiophosphates. M. I. Kabachnik and T. A. Maslennikova. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1953, 108-12 (Engl. translation).—See *C.A.* 48, 3244a. H. L. H. ✓

9

KABACHNIK, M.I.; MASTRYUKOVA, T.A.; BALUYEVA, G.A.; KUGUCHEVA, Ye.Ye.;
Shipov, A.E.; MELENT'YEVA, T.A.

Application of the Hammett equation to dithio phosphorus acids. Zhur.
ob. khim. 31 no.1:140-145 Ja '61. (MIRA 14:1)

1. Institut elementoorganicheskikh soedineniy Akademii nauk SSSR.
(Phosphorus acids)

MASTRYUKOVA, T. A.

USSR/Chemistry - Phosphorus Organic Jan/Feb 53
Compounds

"Research in the Field of Organophosphorus Compounds. Concerning Dialkyldithiophosphates,"
M. I. Kabachnik and T. A. Mastryukova, Inst of
Org Chem, Acad Sci USSR

Iz Ak Nauk SSSR, OZhN, No 1, pp 121-125

For the first time, dialkyldithiophosphates were obtained in a pure form, as liquids distilled under vacuum. Some of their properties were investigated. It was demonstrated that the

258T9

dialkyldithiophosphates formed in the reaction of alcohols with the phosphorus sulfides, P_4S_7 and P_4S_{10} , are identical. It was further shown that, during oxidation with iodine, aliphatic dialkyldithiophosphates form the corresponding disulfides.

1. A.

1/2

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Organic Chemistry

4
② Theory of tautomeric equilibrium. III. Pseudomerism. Structure and properties of dialkyl thionophosphites. M. I. Khabachnik and T. A. Mastryukova. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1953, 103-70; cf. C.A. 46, 8409f. — Phototropic tautomeric equil. is a form of protolytic acid-base equil. in which 2 acids with the same anion exist in a solvent or a base which acts as proton carrier. At-tempts were made to examine the possible system $(RO)_2P(S)H \rightleftharpoons (RO)_2PSH$ by means of reactions that would involve the latter form (addn. of cuprous halides, S, RX); none of these reactions took place. Only formation of metallic derivs. could be possibly placed in this category; these appear to have the structure $(RO)_2PSM$, but the Na salts in their action on H_2O do not act as salts of a strong acid and are instantly hydrolyzed. Hence in the above system the 1st structure is so predominant that the reac-tions of the 2nd form are not realized; this fact is contrary to the usual concepts of pseudomerism. A theoretical examn. of the kinetics inherent in pseudomerism Ingold and Thorpe, *New Aspects of Tautomerism*, 1925, p. 17 (C.A. 18, 1114) indicates admission of such reaction rates that are not actually realized. It is believed that reactions of this group proceed by transfer of the reactive center without involve-ment in tautomeric transformation. [K. at this point re-ports his use of the ideas of resonance in a previous publica-tion, (C.A. 42, 4900a).] All properties of dialkyl thio-phosphites indicate the structure $(RO)_2P(S)H$; these are sol. in org. solvents and aq. F(OH), but insol. in H_2O ; their solns. are neutral; they are insol. in aq. alkalis and are vigorously oxidized by HNO_3 , yielding H_3PO_4 ; they are hydrolyzed by acids and alkalis, yielding H_3PO_4 ; they are slowly consumed by alkali because of hy-drolysis to $(RO)_2P(S)(ONa)H$; after this the alkali con-sumption becomes so slow that it is possible to actually titrate these esters to this endpoint. This is similar to the

behavior of (RO)₂POH. Acidification of these Na salts yields solns. of acidic monoalkyl thiophosphites which are stable for months. The mol. refractions of these esters, (RO)₂P(S)H, agree very well with exptl. results if the above structure is assumed, with the refractivity of P taken as 4.27 and that of S as 0.70. To 1.54 g. (EtO)₂PSH in 3 ml. EtOH was added 2 ml. H₂O, then 0.4 g. NaOH and 3 ml. H₂O; when the alk. reaction disappeared the soln. was evapd. over P₂O₅, yielding colorless plates of (EtO)P(S)H(ONa). Similarly was obtained the Bu analog, (EtO)₂PSH failed to react with S after 5 hrs. heating at 100°. (EtO)₂PSH (11.6 g.) treated with 5.4 g. Cl₂ at -10° gave 45%

2/2 M. L. Kabachnik

(EtO)₂PSCl, b_p 81-2°, n_D²⁰ 1.4711, d₄ 1.1918. (EtO)₂PSH in a suspension of Na in C₆H₆ yields the Na deriv. and the product forms a cryst. ppt. This is best prepd. as follows: Na dust in C₆H₆ is converted to EtONa by addn. of EtOH and treated with the calcd. amt. of the ester; finally, the Na deriv. can be prepd. in EtOH-EtONa soln. The product from 4.62 g. (EtO)₂PSH and 0.69 g. Na in 12 ml. C₆H₆ was mixed with 0.96 g. S; the reaction was strongly exothermic; after 1 hr. the mixt. was filtered and the product extd. with H₂O; addn. of basic Pb acetate to the aq. soln. gave (EtO)₂P(S)₂Pb, m. 75-6°. The Na deriv. from 23.1 g. (EtO)₂PSH and 3.44 g. Na in C₆H₆ was treated with 22.8 g. EtI, the mixt. allowed to stand 4 days, and the ppt. of NaI washed out with H₂O; distn. of the org. layer gave 50% EtP(S)(OEt)₂, b_p 82-3.5°, d₄ 1.0332, n_D²⁰ 1.4563, which is hydrolyzable only with great difficulty. A similar reaction with EtCl gave 40.5% of the same ester, b_p 90-3.5°, n_D²⁰ 1.4545, d₄ 1.0324. The ester (4 g.) heated in a sealed tube with 2 vols. 1:1 HCl 3 hrs. at 145-55° and the mixt. evapd. to dryness gave EtPO₂H₂, m. 57-8°. Heating 4 g. EtP(S)(OEt)₂ with 1 vol. EtI to 140-50° 3 hrs. in sealed tube gave much EtPSI and 1.3 g. EtP(O)(OEt)SEI, b_p 75-6.5°, d₄ 1.0709, n_D²⁰ 1.4730. To the Na deriv. from 7.7 g. (Et)₂PSH and 1.5 g. Na in C₆H₆ was added 6.82 g. PhCH₂Cl and the mixt. allowed to stand 2 days, yielding, after washing, 5.3 g. PhCH₂P(S)(OEt)₂, b_p 124-5°, d₄ 1.1022, n_D²⁰ 1.5303. A similar reaction with ClCH₂CO₂Et gave 72.2% EtO₂CClH₂P(S)(OEt)₂, b_p 105-6°, d₄ 1.1204, n_D²⁰ 1.4621, which, hydrolyzed 3 hrs. with 1:1 HCl at 130° in sealed tube, gave HO₂CClH₂P(O)(OEt)₂, m. 138-9°. Addn. of an equiv. amt. of aq. AgNO₃ and a little NH₄OH to (EtO)₂PSH in EtOH yields a colorless ppt. of the Ag salt, which darkens in light; it dissolves slowly in C₆H₆, forming a sol of Ag. The results are held to be the evidence for the structure of the Na deriv. as (RO)₂PSNa with tervalent P. Their formation is ascribed to transfer of the reactive center during the reaction of formation, yielding ions (RO)₂PS⁻. Alkylation with RX appears to occur by attack of the RX on the unshared electron pair at the P atom, with elimination of Na, which forms NaX, although it is possible that the anion (RO)₂PS⁻ can also participate similarly.

G. M. Kosolapoff

Synthesis of esters of α -aminoalkylthiophosphonic acids. M. I. Kabachnik, T. Ya. Medved, and T. A. Mastryukova (Inst. Vys. Chem. Acad. Sci. U.S.S.R., Moscow). Dokl. Akad. Nauk S.S.S.R. 92, 959-62 (1953); cf. C.A. 47, 3226c, 3902a; 48, 3243c; following abstr. - In (RO)₂PSH, the tautomeric shift from (RO)₂P(S)H to (RO)₂PSH is relatively small, but in presence of R'ONa these esters form salts which are based on trivalent P: (RO)₂PS Na⁺, which on alkylation yield R'PS(OR). The thio esters react with carbonyl compds. in the presence of NH₃, yielding esters of aminothiophosphonic acids, the reaction being more smooth than with the corresponding (RO)₂POH. The thiophosphites were heated with equiv. amts. of aldehydes or ketones in the presence of 50% excess 10% NH₃ in abs. EtOH in a sealed tube 3 hrs. at 100°. The products were then distd. *in vacuo*. With BzH and AcPh the reaction required 6 hrs. and the products were isolated as picrates. The following esters were obtained: 53% Me₃C(NH₂)PS(OEt)₂, b_p 83-4°, d₄ 1.0543, n_D 1.4760; 50% di-iso-Pr ester, b_p 87-8°, d₄ 1.0108, n_D 1.4865; 24% di-Ba ester, b_p 120-2°, d₄ 1.0019, n_D 1.4722; 38% MeEtC(NH₂)PS(OEt)₂, b_p 85-8°, d₄ 1.0492, n_D 1.4803; 68% di-iso-Pr ester, b_p 101-3°,

d₄ 1.0204, n_D 1.4740; 26% MeBuC(NH₂)PS(OEt)₂, b_p 99-101°, d₄ 1.0255, n_D 1.4708; 45% di-iso-Pr ester, b_p 107-8°, d₄ 0.9931, n_D 1.3745; 41% PhCH(NH₂)HOCH₂(NO₂)-3,4,6]PS(OEt)₂, m. 175-8°; 83% di-iso-Pr ester analog, m. 174°; PhCArC(NH₂)HOCH₂(NO₂)-3,4,6]PS(OEt)₂, 42%, m. 169-71°; 31% di-iso-Pr ester analog, m. 170°. Hydrolysis of Me₃C(NH₂)PS(OEt)₂ with 1:1 HCl in sealed tube at 120° gave Me₃C(NH₂)PO(OH)₂, identical with that reported earlier (cf. C.A. 47, 3226c). The reaction is believed to proceed by the way of original formation of a salt (RO)₂PSNH₂, based on trivalent P, which then reacts with the carbonyl compds. with transfer of the reactive center yielding (RO)₂PSCR₂O-NH₂⁺, which then exchanges H⁺, yielding NH₃ and (RO)₂PSC(OH)R, in a reversible reaction; the HO deriv. reacts with NH₃ yielding the (RO)₂PSCR₂-NH₂⁺OH⁻ which equilibrates with the final product and H₂O. The existence of the ammonium salt shown above in the reaction soln. is proved by the fact that S dissolves in the soln. (EtOH-NH₃) on heating to 100° and yields (RO)₂PSNH₂; the di-Et ester salt was characterized, m. 162-3°. The same salt is obtained from pure (EtO)₂PSH and NH₃.

G. M. Kosolapoff

Full Translation W-30492, 10 June 54

MASTRYUKOVA, T.A.

USSR/Chemistry Physical Chemistry

Card : 1/1

Authors : Kabachnik, M. I., and Mastryukova, T. A.

Title : About the atomic refraction of phosphorus and sulfur in dithiophosphates

Periodical : Izv. AN SSSR, Otd. Khim. Nauk., 3, 436 - 441, May - June 1954

Abstract : Experiments were conducted to determine whether the magnitudes of atomic refraction of phosphorus-bound sulfur are homologous to the atomic refractions of carbon bound sulfur. The constitutional effects affecting atomic refraction of phosphorus in organic substances and its dependence upon the valent state of the element and nature of formed bonds, are explained. Values were established for a group refraction of two sulfur atoms in esters and mixed anhydrides of dithiophosphoric acid. Twelve references: 6 USSR since 1897, 4 USA, 1 German, 1 Italian. Table.

Institution : Acad. of Sc. USSR, The N. D. Zelinskiy Institute of Organ. Chem.

Submitted : June 5, 1953

MASTRYUKOVA, T. A.

USSR/ Chemistry Physical chemistry

Card : 1/1 Pub. 40 - 25/27

Authors : Kabachnik, M. I., Mastryukova, T. A., and Godyna, E. I.

Title : About atomic refraction of P and S in polythio-organo phosphorus compounds

Periodical : Izv. AN SSSR, Otd. khim. nauk 4, 743 - 745, July - August 1954

Abstract : Experiments showed that the molecular refractions of polythio-organo-phosphorus compounds can be quite accurately computed provided the value of the atomic refraction of the S-atom 9.70 is taken into consideration. Data on the constancy of atomic refraction of P, in identical organo-phosphorus compounds, are included. Ten references: 3 USSR; 1 German; 2 French and 4 USA (1905 - 1954). Table.

Institution : Acad. of Sc. USSR, The N. D. Zelinskiy Institute of Organic Chemistry

Submitted : March 13, 1954

KARACHNIK, M.I.; IOFFE, S.T.; MASTRYUKOVA, T.A.

Theory of tautomeric equilibrium in solutions. Tautomerism of di-alkylthiophosphates. Zhur.ob.khim. 25 no.4:684-693 Ap'55.
(MLRA 8:7)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Thiophosphates) (Tautomerism)

Maslyukova, T.A.

Reactivity of alkyl salts of dialkyl thiophosphoric acids.
 Reactions of alkylation. M. I. Kabachnik and T. A. Maslyukova (Inst. Heterocyclic Compounds, Moscow). *Zh. Obshch. Khim.* 25, 1954-55, 1955; cf. Maslin, et al.; *C.A.* 40, 554. Alkylation of alkyl salts of dialkyl thiophosphates is shown to proceed invariably at the S atom, yielding the corresponding alkyl esters. The starting materials, prepared conventionally are: $(EtO)_2POSK$ in 40 ml. $NaOH$ soln. m. 108°. To 10.3 g. $EtBr$ after 4 hrs. on a steam bath there was isolated 80% $(EtO)(EtS)PO$, b.p. 122.5-3°, n_D^{20} 1.4578, d_4^{20} 1.1067. $(EtO)_2PS$, b.p. 105-5.5°, n_D^{20} 1.4500, d_4^{20} 1.0708, prepd. according to Fischlunke (*C.A.* 7, 287) (0.3 g.), was heated in sealed tube with 18.6 g. $EtBr$ 3 hrs. at 160-170°, yielding 61% $(EtO)(EtS)PO$, b.p. 121.5-2.5°, n_D^{20} 1.4580, d_4^{20} 1.1063. To 0.6 g. $(EtO)_2POSNa$ in 40 ml. dry $EtOH$ was added 18.97 g. $PhCH_2Cl$ and after 4 hrs. at 70-80°, the filtered soln. gave 55% $(EtO)(PhCH_2S)PO$, b.p. 137.5-8°, n_D^{20} 1.5255, d_4^{20} 1.1560; this treated with 10 ml. 20% $HgCl_2$ in dry $EtOH$ gave only slight turbidity; after 0.5 hr. there was added methyl orange and the small amt. of liberated HCl was titrated with $NaOH$, about 0.03

(2)

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NA

Reaction of (EtO)₂P(S)CH₂CH₂SEt with (EtO)₂P(S)CH₂CH₂SEt

equivs. of HCl being found, indicating a substantial purity of the thiol homer. To KOHNa prep'd. from 5.4 g. PhCH₂OH and 1.15 g. Na in xylene, was added 0.43 g. (EtO)₂P(S)CH₂CH₂SEt; after 1 hr. at 60° the filtered soln. gave 65% (EtO)₂P(S)CH₂CH₂SEt, b_p 122.5-3.5°, n_D²⁰ 1.5182, d₄ 1.1301, which treated with alc. HgCl₂ rapidly gave a ppt.; titration revealed the formation of 1 equiv. liberated HCl. Heating 0.5 g. (EtO)₂P(S)CH₂CH₂SEt with 0.266 g. PhCH₂Cl 2.5 hrs. at 140-5° in a sealed tube gave an amorphous ppt. and 20% (EtO)₂P(S)CH₂CH₂SEt, b_p 140-1°, n_D²⁰ 1.5275, d₄ 1.1580. Substantially no HCl was liberated from (EtO)₂P(S)CH₂CH₂SEt with alc. HgCl₂. To 38.4 g. (EtO)₂P(S)CH₂CH₂SEt in dry EtOH was added 0.4 g. CICH₂CH₂SEt; after 20 min. at 65-75°, then 2 hrs. at 80-5°, the mixt. was filtered and distd. yielding 87% (EtO)₂P(S)CH₂CH₂SEt, b_p 127-8°, n_D²⁰ 1.4982, d₄ 1.1183. To 10.3 g. (EtO)₂P(S)CH₂CH₂SEt in 10 ml. CCl₄ was added 6.5 g. HgSCl in CCl₄; after subsidence of the exothermic reaction the mixt. was kept 3.5 hrs. at 40° and filtered; distn. gave 53% (EtO)₂P(S)CH₂CH₂SEt, b_p 182-4°, n_D²⁰ 1.4850, d₄ 1.1245. Similarly HgSCl gave 5% (EtO)₂P(S)CH₂CH₂SEt, b_p 82-4°, n_D²⁰ 1.4721, d₄ 1.0224. G. M. R.

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Mastryukova, T.A.

Reaction of dialkyl dithiophosphates with ethylene oxide. 3
M. I. Kabachnik, T. A. Mastryukova, and V. N. Odnora
Izv. J. Gen. Chem. U.S.S.R. 25, 2241 (1950) Engl.
(translation). See C.A. 50, 9281b. B. M. R.

PM

MasTroykova T.A.

Reaction of dialkyl dithiophosphates with ethylene oxide.
~~M. I. Kobachnik, T. A. MasTroykova, and V. N. Odnorova~~
~~(Inst. Khim. Akad. Nauk SSSR, Moscow). Zhur. Ob-~~
~~shche Khim. 25, 2274-7 (1955).~~ Passage of ethylene oxide
into (RO)₂PS₂H with cooling to about 50° until the acid re-
action (titmus) is no longer present, gave after distn. in the
presence of a little benzidine, the following esters: (RO)₂-
PS₂CH₂CH₂OH (R. % yield, n_D²⁰, d₄²⁰, and b.p. shown): Et,
65, 1.5250, 1.2042, b. 119-20°; Pr, 62, 1.5140, 1.1440, b.
124-6°; iso-Pr, 59, 1.5083, 1.1323, b. 118.5-20°; iso-Bu,
83, 1.5045, 1.0985, b. 135-8°; Me, 100, undistillable, 1.5380,
1.2911. Treatment of some of these with Ac₂O in pyridine
at 40-50° (final temp.) gave: 70% (EtO)₂PS₂CH₂CH₂OAc,
b. 135.5-6.5°, n_D²⁰ 1.5010, d₄²⁰ 1.1845; 71% (iso-BuO)₂PS₂-
CH₂CH₂OAc, b. 140-1°, 1.4890, 1.0948. To 20 g. (EtO)₂-
PS₂CH₂CH₂OH in CCl₄ was added 20 g. PCl₅ and the mixt.
stirred 1 hr. at 0°; after treatment with ice and washing
with Na₂CO₃ there was obtained 5 g. (EtO)₂PS₂CH₂CH₂Cl,
b. 103-4°, n_D²⁰ 1.5230, d₄²⁰ 1.2270. If the reaction of ethyl-
oxide with the thiophosphates is run without temp. con-
trol, the products are undistillable viscous oils, probably
formed by further condensation of the oxide at the HO
group. Cf. U.S. 2,611,728, C.A. 47, 2930c. G. M. K.

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RM

Mastrukova, T. A.

Tautomerism of acid esters of alkylthiophosphonic acids.
M. I. Kabachnik, N. I. Kurnichen, T. A. Mastrukova,
S. T. Ioffe, E. M. Popov, and N. P. Rodionova (Inst.
Heteroorg. Compds., Acad. Sci. U.S.S.R., Moscow)
Doklady Akad. Nauk S.S.S.R. 104, 861-3 (1955); cf.
Trudy Kievsk. Soveshchaniya Problemy Mekhanizma Org.
Reaktsii, 1953; C.A. 48, 1779c. Since the const. of tauto-
meric equil. K_{ts} in a solvent S can be related to thermo-
dynamic acidity const. K_1 and K_2 , and activity coeffs. of
un-ionized acid f_u and f_i of the 2 forms, by the relation
 $K_{ts} = K_1 f_u / K_2 f_i$, the principle was applied to tautomerism
of compds. of type $RPS(OR')OH$. These were prepd. by
the reaction of $(RO)_2PSH$ with $RONa$, treatment of the
resulting Na salts with HCl to form $RPS(OR)_2$, partial hy-
drolysis with $NaOH$, and neutralization with HCl . The
following data were obtained for $RPS(OR')OH$ (R, R' :
b.p., n_D^{20} , d_4^{20} , K in 7% EtOH, K in 80% EtOH, pK in 7%
EtOH, pK in 80% EtOH, exptl. mol. wt. in C_6H_6 , exptl.
mol. wt. in $PhOH$ given): $Me, Et, b.p. 85-8^\circ, 1.4927$,
 $1.1757, 2.18 \times 10^{-4}, 8.1 \times 10^{-4}, 1.00, 3.51, 225.7, -$
 $Et, Et, b.p. 84.6-5.6^\circ, 1.4916, 1.1337, 1.32 \times 10^{-4}, 1.91 \times$
 $10^{-4}, 1.89, 3.72, 269.75, 152.49; Pr, Et, b.p. 101-2^\circ, 1.4876$,
 $1.0974, 1.01 \times 10^{-4}, 1.55 \times 10^{-4}, 2.00, 3.81, 234.43$,
 $168.95; Bu, Et, b.p. 64.5-5^\circ, 1.4831, 1.0721, 8.09 \times$
 $10^{-4}, 1.11 \times 10^{-4}, 2.11, 3.95, 270.47, 174.81$. A plot of
 pK_{ts} against pK_{H_2O} (cf. above references) indicates that
the tautomeric shift in these acid esters favors the form
 $RPS(OR)OH$, over $RPOSH$, since the curve coincides
with that of $(RO)_2PO_2H$ and not $(RO)_2PSH$. No estm. of

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Schacknik, M. I. et al.

the extent of the shift could be made. Infrared spectra of the above acids and their neutral esters (listed below) were detd. RPS(OH)OH compds. did not show the 1215 cm^{-1} band characteristic of P=O link; also absent are the SH bands 2400-2500 cm^{-1} . The typical HO band 3080-3120 cm^{-1} was present. The neutral esters (crmpd., b.p., n_D^{20} , d_4^{20} given): *EtPS(OEt)*, b.p. 80-3°, 1.4570, 1.0321; *EtPO(OEt)SEt*, b.p. 69.5-8°, 1.4747, 1.0670; *MePS(OEt)*, b.p. 70.5-8° 1.4610, 1.0353; *MePO(OEt)SEt*, b.p. 106-8.5°, 1.4718, 1.0904; *EtPS(OBu)*, b.p. 70.5-83°, 1.4533, 0.9775; *EtPO(OBu)SEt*, b.p. 92-4°, 1.4560, 0.9951; *EtPS(OMe)OEt*, b.p. 74-5°, 1.4665, 1.0047; *EtPO(SMe)OEt*, b.p. 93-3°, 1.4700, 1.1058; *EtPS(OEt)*, b.p. 78-3.5°, 1.4570, 1.0314, and *EtPO(OEt)SEt*, b.p. 67.7-8.2°, 1.4740, 1.0372. Treating *EtPS(OEt)OH* with CH_3N gave *EtPS(OMe)OEt* and *EtPO(SMe)OEt*, while MeCHN gave *EtPS(OEt)* and *EtPO(OEt)SEt*. The relative yields of the P-S and P=O esters were 10:90; this yield ratio, however, cannot be necessarily indicative of the extent of tautomerism in the acid esters.

G. M. Kosolapoff

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PM

MASTRYUKOVA, T. A.

"Studies in Organophosphorous Insecticides"
paper presented at Nn First Conference on Phosphorous Compounds, Kazan,
8-10 Dec 56

SO: B-3,084,841

MASTRUKOVA, T. A.

Chem. Esters of alkylthiophosphoric and alkylthiophosphonic acids. M. T. Kabanov, T. A. Mastrova, and N. I. Kurochkin (Inst. Higher Org. Chem., Acad. Sci. U.S.S.R., Moscow). Izv. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1955, 193-8; Bull. Acad. Sci., U.S.S.R. Div. Chem. Sci. 1956, 185-9 (Engl. translation); cf. C.A. 48, 3243c. Treatment of $(\text{RO})_2\text{PSH}$ with RONa , followed by an alkyl halide and heating the mixt. 2-3 hrs. at $70-80^\circ$, gave after sepn. of NaX and distn. the following esters: $\text{MePS}(\text{OEt})_2$, b_p 76.5-8°, n_D^{20} 1.4610, d_4^{20} 1.0553; 45% $\text{EtPS}(\text{OEt})_2$, b_p 80-8°, n_D^{20} 1.4576, d_4^{20} 1.0324; 24% $\text{PrPS}(\text{OEt})_2$, b_p 63.5-65°, n_D^{20} 1.4596, d_4^{20} 1.0155; 46% $\text{BuPS}(\text{OEt})_2$, b_p 74.5-75°, n_D^{20} 1.4609, d_4^{20} 1.0094; 44% $\text{PhCH}_2\text{PS}(\text{OEt})_2$, b_p 125.5-7.5°, n_D^{20} 1.6306, d_4^{20} 1.0131; 31% $\text{ArPS}(\text{OEt})_2$, b_p 72-4°, n_D^{20} 1.4535, d_4^{20} 0.9848; 65% $\text{EtPS}(\text{OSu})_2$, b_p 70.5-83°, n_D^{20} 1.4553, d_4^{20} 0.9775. Heating the above thiono esters with an excess RBr in sealed tube 4-11 hrs. at $140-200^\circ$ gave the isomeric thiol esters: 31% $\text{MePO}(\text{SEt})(\text{OEt})_2$, b_p 106-8.5°, n_D^{20} 1.4718, d_4^{20} 1.0904; 33% $\text{EtPO}(\text{SEt})(\text{OEt})_2$, b_p 66.5-8°, n_D^{20} 1.4747, d_4^{20} 1.0670; $\text{PrPO}(\text{SEt})(\text{OEt})_2$, 52%, b_p 55-6.6°, n_D^{20} 1.4733, d_4^{20} 1.0447; 39% $\text{BuPO}(\text{SEt})(\text{OEt})_2$, b_p 98.5-100°, n_D^{20} 1.4728, d_4^{20} 1.0292; 42% $\text{PhCH}_2\text{PO}(\text{SEt})(\text{OEt})_2$, b_p 134-6°, n_D^{20} 1.5350, d_4^{20} 1.1263; $\text{MePO}(\text{SEt})(\text{OSu})_2$, 22%, b_p 102-4.6°, n_D^{20} 1.4664, d_4^{20} 1.0668; 14% $\text{EtPO}(\text{SEt})(\text{OSu})_2$, b_p 62-4°, n_D^{20} 1.4653, d_4^{20} 0.9951. Addn. of 7 g. dry EtOH to 10.4 g. PhNMe_2 and 20 g. MePOCl_2 in Et_2O , with cooling, followed by 3 hrs. at room temp., sepn. of the pptd. hydrochloride, and addn. of the dried soln. to a soln. of 2.3 g. Na in 6.2 g. EtSH in Et_2O , yielded after 2 days at room temp. 1.8 g. $\text{MePO}(\text{SEt})(\text{OEt})_2$, b_p 110-11°, d_4^{20} 1.0940, n_D^{20} 1.4743. Similarly was prepd. 64% $\text{EtPO}(\text{SEt})(\text{OEt})_2$, b_p 64°, n_D^{20} 1.0717, d_4^{20} 1.0721. Thus